DOCUMENT RESUME

ED 239 185 CG 017 232

AUTHOR Dapkus, Marilyn A.
TITLE A Thematic Analysis of the Experience of Time.
PUB DATE Aug 83
NOTE 36p.; Paper presented at the Annual Convention of the American Psychological Association (91st, Anaheim, CA, August 26-30, 1983).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Adults; Classification; *Psychological Studies; Relativity; *Scientific Concepts; *Time; *Time Perspective
IDENTIFIERS Thematic Analysis

ABSTRACT

The importance of man's relationship to time has been widely recognized in psychology. However, ideas about how the subject should be defined and studied have varied greatly. To explore the phenomenological "experience of time", 20 white, middle class, mature, articulate adults (10 male, 10 female) participated in 1-hour semi-structured, clinical style, audiotaped interviews. The interviews were subsequently analyzed for thematic categories. An analysis of the results showed that three major categories of temporal experience were identified: change and continuity (becoming in time); limits and choices (doing in time); and tempo (pacing in time). (A discussion of the category system as a useful conceptual framework for organizing information about the experience of time in various diagnostic groups is included.) (BL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED239185

A THEMATIC ANALYSIS OF THE EXPERIENCE OF TIME

By

M. A. Dapkus, Ph. D.

The University of Tennessee, Knoxville

6401 Nightingale LN #172

Knoxville, TN 37919

(615) 584-6476

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Marilyn A. Dapkus

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Presented at the 91st Annual Convention of the

American Psychological Association at Anaheim, CA

August 1983

CG 017232

Acknowledgements

The author gratefully acknowledges Howard R. Pollio and Charles P. Cohen for their invaluable assistance in conducting this research.

Abstract

A category system describing the human experience of time was developed in efforts to put existing theoretical notions about time ("future time perspective," "time urgency," "object constancy," etc.) into a broader theoretical context. Twenty mature, articulate, well-educated subjects were interviewed about their "experience of time." A thematic analysis of these interviews produced three major categories: (1) Change and Continuity ("becoming in time"), (2) Limits and Choices ("doing in time"), and (3) Tempo ("pacing in time"). The experience of time in various diagnostic groups was discussed in terms of the category system.

A THEMATIC ANALYSIS OF THE EXPERIENCE OF TIME

The importance of man's relationship to time has been widely recognized in psychology (Doob, 1971; Fraisse, 1963; Wallace, 1960). Opinion on how the subject should be defined and studied, however, has varied greatly. The psychological literature on time includes investigations into the "experience of time" (Gorman and Wessman, 1977; Wallace, 1960), "time perspective" (Kastenbaum, 1960; Wallace, 1956), "temporal orientation" (LeShan, 1952; Braley and Freed, 1971), "attitude toward time" (Calabresi and Cohen, 1968; Knapp, 1962), "time sense" (Ames, 1946; Seeman, 1976; Hortocollis, 1974), "conception of time" (Piaget, 1969), "time awareness" (Knapp and Garbutt, 1958), and "meaning of time" (Miller, 1964). The topics "time estimation" (Bindra and Waksberg, 1956; Newman, 1972) and "tempo" (Goldman-Eisler, 1952; Kir-Stimon, 1977) are generally recognized as having a separate identity from but being related to the various topics comprising human temporal experience.

Followers of different theoretical orientations in psychology typically focus on different aspects of time. Cognitive and/or behavioral psychologists typically focus on correlates of specific time-related constructs; for example, academic achievement and "future time perspective" (DeVolder and Lens, 1982; Wallace, 1956) or "time urgency" as related to the Type A coronary prone behavior pattern (Yarnold and Grimm, 1982; Burnam et al., 1975). Psychoanalytically oriented theorists are interested in the meaning or experience of time as it relates to personality dynamics revealed in psychotherapy

(Seeman, 1976; Yates, 1935). Specific aspects of temporal experience such as the experience of waiting (Goldberg, 1971), of "stinginess" with time (Pettit, 1969), or of the constancy of the self or other over time (Ingram, 1979) often form the focus of study. Phenomenological psychologists examine the reflected-upon experience of time or the "Being a self in time" (Keen, 1970) which, along with various other categories of experience (e.g., "Being a body in space" and " "Being with others"), is thought to comprise the experiential world of the patient.

Despite the variety of theoretical approaches and constructs that have been developed to describe the human relationship to time, a cohesive theoretical structure capable of integrating the various aspects of the phenomenon is still lacking. What is the theoretical relationship, for example, between notions of "future time perspective," "time urgency," and "object constancy"? Failure to view temporal phenomena more generally has been acknowledged by various theorists with the justification that focusing on specific aspects is the only way to approach a topic that is so broad, so difficult to define, and so lacking in valid behavioral measures. Wallace (1956), in studying "future time perspective," explicitly acknowledged his attempt to "eliminate this lack of rigor in the definition of temporal concepts" by focusing on only one portion of the temporal dimension--the future--and only on one aspect of handling conceptions of the future, that of "timing and ordering of personalized future events."

Although narrowly defined concepts about time have endured quite well over the course of experimental and quasi-experimental research,

an overall structure or theoretical system capable of describing the human relation to time in its totality is necessary to put concepts such as "future time perspective," "time urgency" and "object constancy" into a single, coherent context. The value of descriptive, naturalistic approaches to the study of a phenomenon has been recognized as a necessary counterpoint to the work of hypothesis testing (Bakan, 1967; Lorenz, 1950; Glaser and Strauss, 1967). The "unprejudiced observation of all there is to be observed" about a phenomenon in order to take an "inventory" of the parts of the system before the workings of the parts are studied in isolation seems a fundamental rule of inductive natural science (Lorenz, 1950). In social science, the process of articulating basic conceptual categories prior to the process of formulating hypotheses (or generalized relations) among the categories chosen as significant has been recognized as essential to the development of "grounded theory" (Glaser and Strauss, 1967).

The task of "observing all there is to be observed" with regard to time is a difficult one. "Time" is not uniquely associated with any one behavior, thought, or emotion. To create the broadest possible context, the subject of the current study was construed as "the experience of time." To explore this experience, twenty mature, articulate adults were interviewed about their "experience of time" in a semi-structured interview using the clinical method (Piaget, 1929) to obtain a comprehensive account. The value of using naive, adult subjects to provide information about pyschological phenomena has been recognized in recent research (Michela et

al., 1982; Sternberg et al., 1981). For example, the opinions of "laypersons" regarding the causes of loneliness (Michela et al., 1982) and the nature of intelligence (Sternberg et al., 1981) have been used to confirm hypotheses that have been theoretically derived. Within the context of the present study, information obtained from respondents about the experience of time in their lives was used to develop a theoretical system of categories capable of encompassing the human experience of time.

Method

Subjects

Subjects were 10 male and 10 female volunteers from a local community church group. Subjects were all Caucasian adults (mean age 42.8; median age 41.2), from a middle-class socioeconomic bracket. The majority of individuals were college-educated, employed, married, and had one or more children living in the home. The task was presented to them as a study of "how people experience time."

Procedure

All subjects participated in an approximately hour-long, audiotaped, semi-structured interview about their "experience of time." Specific questions used in the interview were as follows:

1. Tell me about your experience of time.
2. Think about an experience, an event, or a period in your life when you were particularly aware of time. Tell me about it. Has anything since that experience felt the same way?

3. In your daily life now, when are you most aware of time? Least aware of time?
4. What do you remember about your experience of time as a child? How did your experience of time change as you got older? How has your experience of time changed since you have been working? Since you got married? Since you had children? How do you think your experience of time will change as you get older? As you approach death?
5. Is your experience of time the same when you are alone as when you are with other people? Are there some people with whom you are more aware of time? Less aware of time?
6. How do you think your experience of time is different from or the same as that of other people? How do you think that your experience of time is different from or the same as that of your spouse? Your mother? Your father? Your children? How can you tell?

A clinical method of interviewing was used. In this method, the interviewer asks the subject to elaborate on or explain statements that appear to the interviewer to be ambiguous, inconsistent, extreme, or one-sided. Such elaborations are continued until both interviewer and respondent feel that the matter under consideration has been clarified to their mutual satisfaction.

Each interview was analyzed for thematic categories following a revision of the procedure outlined by Colaizzi (1978). The initial step involved transcribing and segmenting interview data into manageable units for analysis. The problem of segmentation, or determining

the unit of analysis appropriate to the subject matter, has been considered in research utilizing interview data (Eldred et al., 1954; Labov and Fanshel, 1977) where the conclusion has been that a unit delimited by what is judged to be a "change of subject" is perhaps the most meaningful for this type of data. In the present study, a new unit or change of subject generally occurred with each new question; within responses to a single question, however, there often were multiple units. Once delimited, all units were paraphrased in the subject's own language, transcribed, and numbered.

The units resulting from this procedure were analyzed for themes regarding each subject's experience of time. Themes obtained early in the analysis were progressively collapsed into a smaller number of themes in subsequent steps of the data analysis. Through a process of continually checking back and comparing themes between (and within) interviews, redundancies were eliminated and higher-order relationships between themes formulated. There was an attempt to conceptualize themes in terms of figure-ground relationships; for example, one subject's focus on "change" in his life was conceptualized against the "ground" of "continuity." Emphasis on one aspect of the experience of time stimulated an interest in exploring the "ground" of that experience, for example, one subject's emphasis on "not having enough time to do everything" led to an exploration of "doing things in time" in general.

Themes obtained during the early phase of the data analysis were sentence-length and specific in content while later themes were increasingly more concise, abstract and conceptually inclusive.

For example, the early themes, "The subject is very much aware of not having enough time to accomplish everything before retirement age," and "The subject is uncomfortable when there is too much unstructured time and not enough to do," were reduced to a general statement about "time as a limit" in later steps of the data analysis. At each level of analysis, the themes obtained were referred back to the original data to determine if they were still able to account for the experiences described. After the final reduction of themes had been accomplished, individual interviews were scored according to the newly developed category system, with each paragraph-length unit scored as a separate item. A portion of a verbatim interview along with its thematic analysis are presented below for illustrative purposes.

Verbatim Interview

Question: Tell me about your experience of time.

Answer: You mean does it go fast or slow? I'm most aware of time when I first get up in the morning; the alarm goes off and I think, "God, I wish I had just 10 more minutes to sleep." But then by the end of the day, it seems to have gone by so fast and I think, "Here it is, evening again, and another day has gone by." Time seems to go faster, too, as I get older. Ask me something else.

Question: Think about an experience, an event, or a period in your life when you were particularly aware of time. Tell me about it.

Answer: I think as far as my life goes, I'm more aware of time now that I've ever been, cause I'm getting older. Also, especially, um, since I'm single . . . and I'd still like to have children, so I think about when will I reach the end of my childbearing years. You know--"By when do I have to meet someone, so I can get married, so I have enough time to have a child by time I'm 35?"--that sort of thing. Time becomes more of a constraint as I get older.

Paragraph-length Units

1. Does time go fast or slow?
2. I'm most aware of time in the morning when I wish I had more time to sleep. By the end of the day time seems to have gone so fast.
3. Time seems to go faster as I get older.
4. I'm more aware of time as I get older. I want to have children so I'm aware of reaching the end of my childbearing years. By when do I have to get married to have a child before 35? Time as a constraint.

Themes: First Reduction

1. The subject is aware of time going either fast or slow, depending on different times of life (faster as she gets older) and different times of the day.
2. The subject is aware of time being a constraint on what she can do (e.g., how long she can sleep, when she must have a

child). She's aware of the need to do certain things (e.g., have a child) before certain changes take place.

Themes: Second Reduction

1. Time goes fast or slow.
2. Time as a constraint on what you can do.
3. Changes over the life span.

In order to determine if the experimenter's categories could be reliably communicated to and used by other raters, a manual was constructed describing the major categories in text and chart form. Two independent raters used the manual to code 56 paragraphs selected from the interviews. These results were used as an estimate of the reliability of the category system. Both raters were second year graduate students in clinical psychology.

Results

Reliability of Codings

Of the 56 items used in the reliability task, there was agreement in coding on 75.0% of the items between the Experimenter and Rater 1, on 83.9% of the items between the Experimenter and Rater 2, and on 80.3% of the items between Rater 1 and Rater 2. "Agreement" was defined as assigning an item to exactly the same temporal category code. Agreement levels obtained were judged to be sufficient to allow for at least initial acceptance of the reliability of the coding system.

Major Categories of Description

Analysis of the data produced by all 20 respondents yielded three major categories of temporal experience. These categories may be described in the following terms:

1. Change and Continuity: This category refers to the fact that things (people, nature, etc.) are constantly changing and yet have continuity in time. Notions of having a "past," a "present" and a "future" are based on an awareness of the fact that things have and will continue to change or stay the same. This is essentially a category of "becoming" in time.

2. Limits and Choices: This category refers to the fact that people chose to spend their time on certain activities and are limited in what they can do because of the amount of time they have. Having a limited amount of time forces us to make choices and the choices we make give meaning to our lives; thus time is either "wasted" or "well spent." This is essentially a category of "doing" in time.

3. Tempo: This category refers to the speed or pattern of movement in time, whether fast or slow, regular or irregular. When "time is going too quickly/slowly" there is usually the implication that the person is not going fast/slow enough. This is essentially a category of "pacing" in time.

The pattern of relationships existing between the three categories may be represented in the form of a triangle (see Figure 1), with each of the three categories forming one corner of the triangle. In experience, the three categories form a unity; thus, it is not

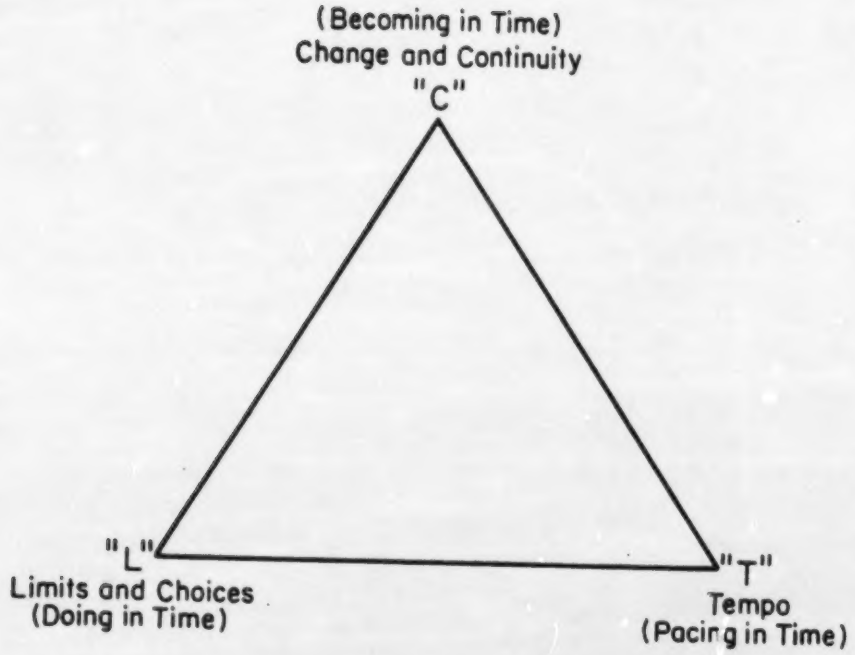

Figure 1. Illustration of the Time Categories

possible to do anything (Limits and Choices) without producing some kind of change (Change and Continuity) at a certain rate (Tempo). Conceptually, however, it is possible to define one aspect of temporal experience as different from another, just as it is possible to distinugish the three corners of the triangle. A different, and perhaps more psychologically meaningful, way of describing the relationship between categories is in terms of figure-ground relationships. All three categories taken together form the temporal ground of experience; what is made figural by the individual is that aspect of temporal experience attended to at a given moment. Taking the triangle analogy one step further, any given experience related to time can be visualized as occupying a point somewhere on the surface of the triangle, allowing the conceptualization of combined, second-order categories. For example, a point located "between" the corners defined by Tempo and Change and Continuity may be understood as representing the second-order category of Tempo of Change (or Continuity).

A comprehensive analysis of the three major categories is presented in Table 1. Over the course of the thematic analysis it was found that specific statements about time could be grouped according to other major categories of existential analysis, several of which have been recognized in the relevant existential-phenomenological literature (Keen, 1970; Pollio, 1982). On the vertical axis of Table 1 are the three time categories described in the present research while on the horizontal axis are four different content

Table 1

Description of the Time Categories

	The Self World in Time	Values and Mood about Time	The Body in Time	Time in Culture
Change/ Continuity ("Becoming in time")	1) Things change and yet stay the same over time. 2) I remember how things used to be (the past); I anticipate how things will be (the future). 3) It takes a certain amount of time for things to change/to establish continuity. 4) Things change in a certain order. There is a beginning and an end. You can't "live in the past"/ "live in the future."	1) Change is exciting. Too much change can produce anxiety. 2) Continuity provides stability. Too much continuity is stagnating. 3) "Timelessness" as nothing changing/nothing staying the same (e.g., disorientation, mystical experiences).	1) From birth to death, my body is continually changing, growing. 2) Physical changes are "markers" in time. 3) Death as change or continuity (e.g., after-life, memories living on, continuity between generations).	1) History 2) Developmental stages, ages. 3) Clocks, calendars as markers in time.
Limits/ Choices ("Doing in time")	1) I choose to spend my time on certain activities that I enjoy or value. There is a limit to what I can do. 2) It takes a certain amount of time to do an activity. 3) In order to make choices, I have to be aware of the limits. 4) Because I am limited in what I can do, the choices I make are meaningful.	1) There is not enough time to do everything (perfectly). There is too much time and not enough to do. 2) Time as money: "wasted time" vs. "time well spent." 3) Limits provide security. Too many limits can feel restrictive. 4) Choices give meaning to your life. Facing too many choices can produce anxiety.	1) There are limits on what you can do with your time because of physical constraints (e.g., hunger, fatigue). 2) Death as a limit on what you can do, accomplish. Death as a choice.	1) Schedules, deadlines. 2) Clocks, calendars as schedules.
Tempo ("Pacing in time")	1) Things move fast, things move slow. 2) Things move in different patterns or rhythms (e.g., regular, irregular, cyclic). 3) I'm a fast person/a slow person.	1) Things are moving too fast/too slow. I am moving too fast/too slow. Time is going too fast/too slow. 2) Things are moving at a comfortable rhythm. The rhythm is disrupted.	1) The tempo of bodily processes (e.g., fast or slow metabolism, reaction time, speed and pattern of brain waves). 2) I have a lot of energy. 3) Death as an absence of movement.	1) Speed, rate. 2) Clocks, calendars as timing devices.

categories: (1) Self and World, (2) Values and Mood, (3) the Body, and (4) Culture. Examination of the internal cells of this table reveals that statements with markedly different content may refer to the same or similar experiences of time. For example, statements about anxiety, birth and death, and clocks and calendars all can be understood as referring to the same experience of time (e.g., "Change and Continuity"). Conversely, statements with the same content can be understood as referring to different aspects of the experience of time. Clocks and calendars, for example, are items which are perhaps most symbolic of time in our culture. In terms of the human experience of time, however, they can have several different meanings: they can be used to mark Change and Continuity, they can be used to make schedules for things that have to be done on time (Limits and Choices), or they can be used to measure the rate or speed of movement in time (Tempo).

Table 2 illustrates one way in which the three major categories may be combined to form second-order categories. Combining the categories of Change and Continuity (on the vertical axis) and Tempo (on the horizontal axis), for example, yields the second-order category, "Tempo of Change (or Continuity)." This chart is useful in illustrating the fact that the meaning of a single statement about time can vary depending on other contextual statements about time. For example, the statement, "Time is going too fast," clearly relates to Tempo; however, it may be referring to the experience of growing old too quickly (Change and Continuity), to the experience of not having enough time to do everything (Limits and Choices), or

Table 2

Combinations of the Time Categories

	Change/Continuity (Becoming in Time)	Limits/Choices (Doing in Time)	Tempo (Pacing in Time)
CHANGE/CONTINUITY (Becoming in Time)	1) Things change and yet stay the same over time. 2) I remember how things used to be (the past); I anticipate how things will be (the future). 3) It takes a certain amount of time to change/to establish continuity. 4) Things change in a certain order. 5) Change is exciting; too much is anxiety producing. Continuity provides stability; too much is stagnating.	1) The things that I do (the choices I make and the limits I accept) have an impact on what I become (how I change or stay the same). As I change I can do different things. 2) Sometimes I can do things to bring about change, sometimes there is nothing I can do and I have to just let it happen. 3) You have to be a certain age to do certain things. There are different obligations at each age. 4) I am limited in the choices I have now because of what has happened in the past; my choices are limited by what will happen in the future.	1) The rate at which things are changing. Things last a long time/a short time. 2) The pattern or rhythm of change (e.g., regular, irregular, cyclic, etc.). 3) "Time goes too fast" or "time goes too slow" when things are changing faster or slower than you want them to. Joyful times don't last long enough; sorrow and pain last too long. 4) "Time goes fast" or "slow" at different ages. 5) My body grows at a certain rate and has periodic changes.
LIMITS/CHOICES (Doing in Time)		1) I choose to spend my time on certain activities. There is a limit to what I can do. 2) It takes a certain amount of time to do an activity. 3) In order to make choices, I have to be aware of the limits. 4) Because I am limited in what I can do, the choices I make are meaningful. 5) There's not enough time; there's too much time and not enough to do. 6) Time as money: "wasted time" vs. "time well spent." 7) Limits provide security; too many are restrictive. Choices provide meaning; facing too many produces anxiety.	1) The rate of doing an activity. Taking a long time, a short time, to get things done. 2) The pattern or rhythm of doing an activity (e.g., regular, irregular, cyclic, etc.). 3) Doing an activity in a fast manner (e.g., energetic or urgent). Doing an activity in a slow manner (e.g., relaxed or lackadaisical). 4) Doing an activity in a regular manner (e.g., consistent or monotonous). Doing an activity in an irregular manner (e.g., inconsistent or serendipitous). 5) "Time goes too fast" or "too slow" depending on the activity.
TEMPO (Pacing in Time)			1) Things move fast, slow. 2) Things move in a certain pattern or rhythm (e.g., regular, irregular, cyclic). 3) Things are moving too fast/too slow. I am moving too fast/too slow. Time is passing too fast/too slow. 4) The tempo of bodily processes.

to both experiences. Integration of the categories of "Change and Continuity" and "Limits and Choices" produces a category of especially complex and meaningful experiences involving the relationship between what one can "do" (Limits and Choices) and what one will "become" (Change and Continuity).

Using this analysis as a starting point, it is possible to develop a system involving seven different categories. The three first-order categories, their abbreviations, and exemplary statements drawn from the interview data are as follows:

First-order Categories	Abbrev.	Example
1. Change and Continuity	(C)	"Time is like a wheel; the more things change, the more they stay the same."
2. Limits and Choices	(L)	"Time is extremely valuable to me, I'm probably more thrifty with how I spend the minutes of my day than how I spend the dollars in my pocket."
3. Tempo	(T)	"Time is going so quickly; I just can't keep up."

Three second-order categories, involving an integration of pairs of first-order categories, can be described as follows:

Second-order Categories	Abbrev.	Example
4. Change and Continuity and Limits and Choices	(CL)	"My children find it more difficult to live in the present; they're living in the future, for what they're going to do, going to be, going to experience. They don't realize the importance of what they're having, doing, experiencing now."
5. Change and Continuity and Tempo	(CT)	"As you get older, people say that time appears to go faster. When my boy lives one extra year, that's 10% of his life, but when I live one extra year that's only 2% of my life."
6. Limits and Choices and Tempo	(LT)	"My husband doesn't feel as rushed as I do; he's more relaxed, he takes it in stride if time runs out. He can say, 'That's all I can do, that's that,' but I'd be trying to cram in one more thing."

The first of these higher-order categories, CL, includes experiences in which relationship between "doing" (Limits and Choices) and "becoming" (Change and Continuity) are salient. One of the challenges of human existence is to know what can be changed by

doing and what must simply be endured until changes occur naturally. In the experience of grief over the loss of a loved one, for example, there is nothing that one can do except "sit it out." There is also nothing that can be done to hurry the process of growing up. Acceptance of the choices and limitations of one's own age is "living in the present"; constant anticipation of things that one will be able to do later is "living in the future."

The second of these categories (CT) refers to the rate or pattern of change. "Time goes too fast" when things are changing faster than the person wants them to or not lasting long enough. Joyful times, for example, do not seem to last long enough. "Time goes too slow," when things are changing too slowly or lasting too long. Sorrow, sickness and pain always last too long. "Time goes slow" as a child when one is waiting to grow up; "too fast" as an adult when one is growing old too soon. In experiences of intense emotional involvement or in experiences of extreme pleasure or pain, time can appear to stand still if one is oblivious to changes going on around them.

The third category (LT) refers to the rate or pattern of doing an activity. "Time goes too quickly" when the individual feels that he is not keeping up with the rest of the world or is going too slowly. Similarly, when "time goes too slowly," the individual is ready to move on and accomplish things at a fast pace, but feels held back by external forces (e.g., the experience of getting caught in traffic or having to wait in line at the bank). Time can go (pleasurably) quickly or slowly when one is involved in doing something that he enjoys or values.

The final, third-order category integrates all three first-order categories, and may be characterized as follows:

Third-order Category	Abbrev.	Example
7. Change and Continuity, Limits and Choices, and Tempo	(CLT)	"I still tend to think that I have many more years, which is probably why I'm not more motivated to make some changes now. It's easy to think, 'Well I'll do that after the kids are in college.' A person diagnosed as having a terminal illness will quickly set some new priorities and make some changes. If you're not hit over the head, it's easy to keep doing it the same old way."

This category includes all possible combinations of experiences included in the aforementioned categories. For example, the choices that one makes will determine how quickly changes take place, and the changes over the course of one's life will determine how quickly one will choose to do things.

Properties of the Data Evaluated According to Major Categories

The percentage of paragraph-length units scored according to each of these categories is presented in Table 3. The category of Unscoreable items refers to a small percentage of items which could not be scored according to the present category system. The

Table 3

Time Category Scores: Measures of Central Tendency

Category	Mean	Median	Mode	Standard Deviation
C	8.97	4.65	0.00	12.33
L	14.33	10.20	5.00	10.27
T	.55	.13	0.00	1.74
CL	21.79	21.80	25.00	10.24
CT	5.10	.17	.00	8.48
LT	19.07	15.80	15.80	11.64
CLT	27.04	26.40	20.00	13.81
Unscoreable	2.61	.19	.00	4.60
C-total[a]	63.42	66.80	60.00	13.47
L-total[a]	82.24	90.07	100.00	19.62
T-total[a]	52.27	55.20	60.00	17.83

[a]Total percentage of items containing either a C, L, or T score.

categories "C-total," "L-total," and "T-total" refer to the percentage of items containing a Change and Continuity, Limits and Choices, or Tempo score either alone or in combination. Thus, "C-total" would be a sum of the percentages of items coded as "C," "CL," "CT" and "CLT."

The measures of central tendency presented in Table 3 indicate that the greatest percentage of paragraph-length units referred to all three aspects of the experience of time (CLT=27%). Of the three major categories, mention of Limits and Choices regarding the use of one's time was most frequent. On the average, 82% of the paragraph-length segments in each interview contained some reference to Limits and Choices. Subjects were least likely to mention only one aspect of the experience of time alone, particularly Tempo, which was nearly always mentioned in the context of either Change and Continuity and/or Limits and Choices. In summary, this group of subjects was most likely to describe their experience of time in wholistic terms which usually involved some mention of the Choices they were making and Limits they were facing in their lives.

Discussion

While accepting the limitations involved in drawing conclusions from a relatively small sample of highly educated subjects and a relatively unknown method of data analysis, the category system obtained would seem to be a meaningful one in describing not only when and how subjects experience time but also in relating such

experiences to other concepts found in the literature on time. Psychoanalytic notions of "object constancy" (Hortocollis, 1974) clearly seem to concern the category of change and continuity. For example, the cohesion of the "self" and the development of trust in others is dependent on repeated, reliable experiences of change within the context of continuity (Erickson, 1956; Hortocollis, 1974). The ability to wait for changes to occur, and to have faith that they will occur, is a mark of ego-strength or of a "trust in time" (Erickson, 1956; Goldberg, 1971). Psychotherapy may be a matter of freeing the patient from neurotic compulsions so that he may change (Beck, 1979) or or establishing enough continuity in the patient's existence so that a more cohesive sense of self and others may develop (Ingram, 1979; Seeman, 1976).

The concept of "future time perspective," which has been of interest to more cognitively and behaviorally oriented psychologists, may be understood in terms of the concepts of change and continuity. As Kastenbaum (1960) noted, the ability to have a future time perspective requires the person to be able to integrate all three temporal zones rather than focus on just one; in terms of the present system, to grasp change within the context of continuity.

> A person who thinks exclusively of the future, for example, does not have a strong future time perspective--he has no time perspective at all. It is the person that manages to keep past, present, and future in mind who has the opportunity of developing a genuine perspective. (Kastenbaum, 1960, p. 199)

Relating "future time perspective" to variables such as achievement (DeVolder and Lens, 1982) or life satisfaction (Lessing, 1972) presupposes that the ability to reflect on changes in the future also involves the ability to make the choices and accept the limits necessary to make that future come about. Recent research (DeVolder and Lens, 1982) has found that in order for future time perspective to be correlated with achievement it must be more than "wish fulfilling fantasy" (i.e., fantasized change); it must also involve an appreciation of the value of activities that are instrumental in reaching those goals (i.e., appreciation of limits and choices). Thus the category of Limits and Choices may be one way of conceptualizing the motivational component suggested in the research on future time perspective.

Considered in terms of the present analysis, "future time perspective" may also be understood as involving the idea of making choices and accepting limits within the context of reflected-upon changes and continuity in one's life. Similarly, the concept of "time urgency" may involve the idea of rate or pattern of doing an activity; in terms of the present analysis, the categories of Tempo and Limits and Choices. Those with a "rushed" or "time urgent" manner of doing certain activities have been described in the literature (Glass et al., 1974; Burnam et al., 1975; Yarnold and Grimm, 1982) as having a unique personality or coping style, the Type A pattern, which aims at "asserting and maintaining control over potentially uncontrollable events" (Burnam et al., 1975). The

"urgent feeling that he does not have enough time to complete all of his activities" (Glass et al., 1974) may be understood as the person experiencing the pressure of limits and the need to make certain choices regarding the use of his time, which is managed in the case of Type A personality by accelerating the tempo of "doing." The perception of time as passing slowly during a delay (Burnam et al., 1975) may be a reflection of the individual's perception that his own preferred tempo of "doing" has been interfered with by outside forces. The often ill-defined nature of "success" for the Type A personality (Burnam et al., 1975) suggests that a larger context for the activity, in terms of the general direction of change desired in the individual's life, may be missing. In his rushed tempo of "doing" he may not have time to pause or reflect on the changes that are occurring in his physical health, quality of family relationships, etc. as a result of his "time urgency."

Results of the present study are certainly relevant to an understanding of the experience of time as construed by phenomenological (Keen, 1970; Van den Berg, 1972) and personality psychologists (Calabresi and Cohen, 1968; Knapp and Garbutt, 1958; Wessman, 1973). Factors obtained through factor analytic studies regarding the "experience of time" (Wessman, 1973), "attitudes toward time" (Calabresi and Cohen, 1968), and "time imagery" (Knapp and Garbutt, 1981) are comprehensible in terms of the present category system. For example, Wessman's (1973) factors of Immediate Time Pressure ("to try to do several things at the same time and go off in twenty

directions at once") and Time Utilization ("to work fast and efficiently according to schedule") relate primarily to the categories Limits and Choices and Tempo. The factors Long-Term Personal Direction ("to proceed in an orderly way toward goals set long in advance") and Personal Inconsistency ("to react to familiar situations as I have always reacted in the past") appear to relate to experiences included in the categories Change and Continuity and Limits and Choices, e.g., making choices within a context of change. Knapp and Garbutt's (1958) Dynamic-Hasty factor, which is correlated with the achievement motive and characterized by fast-moving metaphors about time ("a speeding train"), may be related to experiences falling into the Limits and Choices and Tempo categories. Their remaining two factors, Naturalistic-Passive and Humanistic, which identify time as being "surrounding and encompassing" and related to human figures, would seem more concerned with Change and Continuity.

The experience of time has also been seen as significant to an understanding of various diagnostic categories used in clinical practice. Time, for the obsessive-compulsive neurotic, for example, is thought to be one of the three main "arenas" (along with dirt and money) wherein his perpetual power struggles are played out (McKinnon and Michals, 1971; Fenichel, 1945; Pettit, 1969). In the present analysis this situation may be understood as an example of a conflict with limits and choices regarding the use of one's time, in which time is seen as a substance either to be well-spent or squandered. The severely depressed individual is thought to experience a slowing

down or even an arrest of the passage of time (Minkowski, 1970; Mezey and Cohen, 1961) which, according to the present analysis, is a distortion in the subjective experience of the tempo of change. The immobilization of the depressed individual or the frenzied, but futile, activity of the agitated depressive (Schwartz, 1961) suggest that there is also a disturbance in the individual's ability to "do" in time. In the present analysis this may be understood as a failure to make choices or to accept limits due to a closing off of the future by the depressed individual. The character disorder, according to Miller (1964), functions as if he were denying the effects of change in his life as well as disregarding the need to make choices that would give meaning to his life ("walking through snow without leaving footprints"). Schizophrenics, those with the most profound disturbance in their sense of time, report experiences in which there is a chaotic disruption of all notions of continuity (and change) as well as highly erratic tempos to the passage of time (Freedman, 1974). In her treatment of schizophrenic patients, Seeman (1976) suggests making interventions that speak directly to the patient's notions of such issues as "'Permanence vs. Change' . . . 'Uncontrollability of Time'," for example, "There are things, such as humans staying human (or the world continuing to revolve around the sun, etc.) that stay the same no matter how much I or you or others wish to change them."

In summary, a category system describing the human experience of time was developed through thematic analysis of interview data

obtained by inquiring into the subject's "experience of time." The category system obtained seems to provide a useful conceptual framework for oganizing information about the experience of time found in the research as well as clinical literature. An understanding of the individual's "becoming in time" (Change and Continuity), "doing in time" (Limits and Choices) and "pacing in time" (Tempo) is believed to provide a meaningful contribution not only to an understanding of the experience of time itself but to all of human experience as well.

References

Ames, L. B. The development of the sense of time in the young child. Journal of Genetic Psychology, 1946, 68, 97-125.

Bakan, D. On method: toward a reconstruction of psychological investigation. San Francisco: Jossey-Bass, Inc., 1967.

Beck, M. Family members perception and use of time: An element in family treatment. Family Therapy, 1979, 6 (1), 5-10.

Bindra, D., and Waksberg, H. Methods and terminology in studies of time estimation. Psychological Bulletin, 1956, 53, 155-159.

Braley, L. S., and Freed, N. H. Modes of temporal orientation and psychopathology. Journal of Consulting and Clinical Psychology, 1971, 36, 33-39.

Burnam, M., Pennebaker, J., and Glass, D. Time-consciousness, achievement-striving, and the Type A coronary prone behavior pattern. Journal of Abnormal Psychology, 1975, 84, 76-79.

Calabresi, R., and Cohen, J. Personality and time attitudes. Journal of Abnormal Psychology, 1968, 73, 431-439.

Colaizzi, P. F. Psychological research as the phenomenologist views it. In R. S. Valle and M. King (Eds.) Existential-phenomenological alternatives for psychology. Dubuque, Iowa: Kendall/Hunt Publishing Co., 1973.

DeVolder, M. L., and Lens, W. Academic achievement and future time perspective as a cognitive-motivational concept. Journal of Personality and Social Psychology, 1982, 42, 566-571.

Doob, L. Patterning of time. New Haven: Yale University Press, 1971.

Eldred, S., Hamburg, D., Inwood, E., Salzman, L., Myersburg, H., and Goodrich, G. A procedure for the systematic analysis of psychotherapeutic interviews. Psychiatry, 1954, 17, 337-345.

Erikson, E. The problem of ego identity. Journal of the American Psychoanalytic Association, 1956, 4, 56-121.

Fenichel, O. Psychoanalytic theory of neurosis. New York: W. W. Norton, 1945.

Fraisse, P. The psychology of time. New York: Harper and Row, 1963.

Freed, B. J. The subjective experience of perceptual and cognitive disturbances in schizophrenia. Archives of General Psychiatry, 1974, 30, 333-337.

Glaser, B. G., and Strauss, A. L. The discovery of grounded theory. Chicago: Aldine Publishing Company, 1967.

Glass, D. C., Snyder, M. L., and Hollis, J. F. Time urgency and the Type A coronary prone behavior pattern. Journal of Applied Social Psychology, 1974, 4, 125-140.

Goldberg, A. On waiting. International Journal of Psychoanalysis, 1971, 52, 413-421.

Goldman-Eisler, F. Individual differences between interviewers and their effect on interviewees conversational behavior. Journal of Mental Science, 1952, 98, 660-671.

Gorman, B. S., and Wessman, E. A. (Eds.) The personal experience of time. New York: Plenum Press, 1977.

Hortocollis, P. Origins of time: a reconstruction of the ontogenetic development of the sense of time based on object relations theory. Psychoanalytic Quarterly, 1974, 43, 243-260.

Ingram, D. H. Time and time-keeping in psychoanalysis and psychotherapy. American Journal of Psychoanalysis, 1979, 39, 319-328.

Keen, E. Three faces of being: Toward an existential clinical psychology. New York: Appleton-Century-Crofts, 1970.

Kir-Stimon, W. "Tempo-statis" as a factor in psychotherapy: Individual tempo and life rhythm, temporal territoriality, time planes, and communication. Psychotherapy: Theory, Research, and Practice, 1977, 14 245-248.

Kastenbaum, R. The dimensions of future time perspective: An experimental analysis. Journal of Genetic Psychology, 1960, 65, 203-218.

Knapp, R. H. Attitudes toward time and aesthetic choice. Journal of Social Psychology, 1962, 56, 79-87.

Knapp, R. H., and Garbutt, J. T. Time imagery and the achievement motivation. Journal of Personality, 1958, 26, 426-434.

Labov, W., and Fanshel, D. Therapeutic discourse. New York: Academic Press, 1977.

LeShan, L. Time orientation and social class. Journal of Abnormal and Social Psychology, 1952, 47, 589-592.

Lessing, E. Extension of personal future time perspective, age, and life satisfaction of children. Developmental Psychology, 1972, 6, 457-468.

Lorenz, K. The comparative method in studying innate behavior patterns. In Symposia of the society for experimental biology, Number IV, Physiological mechanisms in animal behavior. Cambridge: The University Press, 1950.

MacKinnon, R. A., and Michels, R. The psychiatric interview in clinical practice. Philadelphia: W. B. Saunders Co., 1971.

Mezey, A., and Cohen, S. The effect of depressive illness on time judgement and time experience. Journal of Neurology, Neurosurgery, and Psychiatry, 1961, 24, 269-270.

Michela, J. L., Peplau, L. A., and Weeks, D. G. Perceived dimensions of attributions for loneliness. Journal of Personality and Social Psychology, 1982, 43, 929-936.

Miller, M. Time and the character disorder. Journal of Nervous and Mental Disease, 1964, 138, 535-540.

Minkowski, E. Lived time. Evanston: Northwestern University Press, 1970.

Newman, M. A. Time estimation in relation to gait tempo. Perceptual and Motor Skills, 1972, 34, 359-366.

Pettit, T. F. Anality and time. Journal of Consulting and Clinical Psychology, 1969, 33, 170-174.

Piaget, J. The child's conception of the world. New York: Harcourt Brace, 1929.

Piaget, J. The child's conception of time. New York: Basic Books, 1969.

Pollio, H. Behavior and existence. Monterey, California: Brooks/Cole Publishing Company, 1982.

Schwartz, D. A. The agitated depression. Psychiatric Quarterly, 1961, 758-776.

Seeman, M. V. Time and schizophrenia. Psychiatry, 1976, 39, 189-195.

Sternberg, R., Conway, B., Ketron, J., and Bernstein, M. People's conceptions of intelligence. Journal of Personality and Social Psychology, 1981, 37-55.

Van den Berg, J. H. A different existence. Pittsburgh: Duquesne University Press, 1972.

Wallace, M. Future time perspective in schizophrenia. Journal of Abnormal and Social Psychology, 1956, 52, 240-245.

Wallace, M., and Rabin, A. Temporal experience. Psychological Bulletin, 1960, 57, 213-236.

Wessman, A. E. Personality and the subjective experience of time. Journal of Personality Assessment, 1973, 37, 103-114.

Yarnold, P. R., and Grimm, L. G. Time urgency among coronary prone individuals. Journal of Abnormal Psychology, 1982, 91, 175-177.

Yates, S. Some aspects of time difficulties and their relation to music. International Journal of Psychoanalysis, 1935, 16, 341-354.